DOCUMENT RESUME

ED 235 452 CG 016 988

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TITLE An Academic Approach to Stress Management for College Students in a Conventional Classroom Setting.
PUB DATE [81]
NOTE 34p.; Best copy available.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Anxiety; Behavior Modification; Biofeedback; *Classroom Techniques; *Cognitive Processes; *College Students; Coping; Higher Education; Instructional Innovation; Maturity (Individuals); Psychological Patterns; *Relaxation Training; Self Control; *Stress Management; *Stress Variables; Visualization; Well Being

ABSTRACT

Since the identification of stress and the relationship of individual stress responses to physical and mental health, medical and behavioral professionals have been training individuals in coping strategies. To investigate the possibility of teaching cognitive coping skills to a nonclinical population in an academic setting, 41 college students (19 males and 22 females), aged 17-56 (M=21.6), participated in an undergraduate course on stress identification and management. Classes met in three weekly 75 minute sessions over 10 weeks. Interdisciplinary instruction included lectures, discussions, workshops, and practice sessions on relaxation strategies, e.g., reducing muscle tension, Ready Relaxation Response, autogenic temperature training, and imagery. The Symptom Evaluation Survey (SES), State-Trait Anxiety Inventory (STAI), A-State and A-Trait scales, and Beck's Depression Inventory (BDI) were used to assess pre- and post-stress levels in the students. An analysis of the results showed overall stress reduction for the total sample and for females in particular. "Old" students (age 21 and over) showed more stress reduction than their "young" counterparts. Results indicate that non-clinical populations can benefit from an academic approach to stress management in a conventional classroom setting. (BL)

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An Academic Approach to Stress Management for College Students in a Conventional Classroom Setting

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Running head: An Academic Approach to Stress Management

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Abstract

The traditional classroom may provide an effective environment for educating non-clinical populations in stress management techniques. Forty-one college students (19 males, 22 females) enrolled in an elective academic course designed to combine knowledge about stress with experience in selected stress management techniques. Pre/post scores were obtained on four self-report instruments administered during the first and last weeks of the term: Tobin's (1981) Symptom Evaluation Survey (SES); A-State and A-Trait scales from Spielberger's STAI (Spielberger, Gorsuch, & Lushene, 1970); and Beck's (1978) Depression Inventory (BDI). Paired *t* tests show significant differences for the total sample and for females; no male differences were significant. Scores of "old" students (age 21 and over) declined more dramatically than scores of "young" students (age 20 and under). Pooled *t* tests reveal significant male/female pretest differences, but no significant posttest differences. No young/old pretest differences were significant, but older students' posttest STAI scores were significantly lower on both scales. Results indicate that non-clinical populations can benefit from an academic approach to stress management in a conventional classroom setting.

Descriptors: Stress management, undergraduates; relaxation.

An Academic Approach to Stress Management for College Students in a Conventional Classroom Setting

Since Selye's promising theory and research on stress (1956), an entire spectrum of new knowledge has emerged concerning man's ability to adjust and/or adapt to stressors in contemporary society. Following Selye's lead, researchers have linked stress with heart disease (Jenkins, 1971; House, 1974; DeBakey & Gotto, 1977), hypertension (Eliot, 1974; Irwin, 1979; Jenkins, 1980), headaches (Appenzeller, 1973; Hannington, 1975), ulcers (Susser, 1967; Cobb & Rose, 1973), improper diet and nutrition (Powers & Preseley, 1978; Feingold & Feingold, 1979), emotional problems (Cassel, 1974; Selye, 1974; Shealy, 1977), change (Holmes & Rahe, 1967), occupational problems (Cooper & Payne, 1978; Albrecht, 1979; Cooper, 1981), urban life styles (Glass & Singer, 1972; Freedman, 1975), family problems (Orden & Orden, 1969; Rapoport & Rapoport, 1971; Burke, Firth & McGratten, 1974), and many other diseases and social problems. This partial citation of research documents a definite shift in disease patterns from communicable types of illness to stress-related degenerative types of diseases (Stoyva, 1976). The trend represented here seems to suggest an increasing inability to cope with modern institutions and life-styles.

In linking social stressors and individual stress responses to physical and mental health, medical and behavioral scientists began to investigate the possibility of training individuals in coping strategies in order to

modify the stress response (McGrath, 1970; Weitz, 1970; Meichenbaum, 1974). A search of the literature revealed that most attempts to teach cognitive coping skills designed to reduce stress have been limited to clinical situations involving small groups and one-on-one coping sessions. One of the few exceptions to this trend was the work of Yorde and Witmer (1980). Results from their research indicate that the traditional classroom situation can be used to teach stress management techniques to non-clinical populations.

Following the example of Yorde and Witmer our research explores the assumption that knowledge about stress (its definition, causes, consequences, prevention, etc.) combined with class-time practice of selected stress management techniques (e.g., Jacobson's Progressive Relaxation, 1938; Benson's Relaxation Response, 1975; Ellis' Cognitive Restructuring, 1975; Lazarus' concept of Imagery, 1977, etc.) would be sufficient to reduce stress within a typical college-age population in a conventional class-room setting.

Method

Course structure. The course, entitled "The Identification and Management of Stress in Contemporary Society," was offered as a 3-credit undergraduate elective in the Winter Term, 1980-81 at the New Kensington Campus of The Pennsylvania State University. The course spanned a 10-week period consisting of 30 classes, 75 minutes each, meeting 3 times per week.

Sample. The sample population consisted of 41 students, including

19 males and 22 females. The ages of the students ranged from 17-56 with an average age of 21.6. Of these students, 13 were 21 years old and over, while 28 were 20 years old or younger. Field conditions were such that no controls could be exercised over the demographic characteristics of students enrolling in the course; all who registered were admitted. All students were regularly-enrolled at the New Kensington Campus. No attempts were made to advertise the course externally to the public.

Design. Pedagogical techniques used in the course included lectures, discussions, workshops, and practice sessions on specific stress-reduction techniques. All of these techniques occurred within a traditional classroom structure emphasizing an interdisciplinary approach to the study of stress management. Three instructors (from the disciplines of sociology, speech communication, and counseling) formed the core of the teaching team; guest lecturers from physiology, health, recreation, and nursing supplemented the interdisciplinary approach. Student grades were determined by two written examinations, class participation, and homework assignments.

The first phase of the course consisted of didactic lectures on the psychophysiology of stress and the debilitative consequences of maladaptive responses to stress. Regular assignments were made from the required text (Girdano & Everly, 1979). Efforts were made to encourage students to examine their own levels of stress and their response and adaptation to stress. Information on individual stress levels and class profiles was gathered through the administration of several psychological

self-report instruments. Access to individual information was available to each student by appointment. Group profiles were discussed in class without violating individual anonymity.

Phase two of the course presented intensive training in relaxation, which was offered as a method for reducing stress. Time was allocated throughout the course for in-class practice of several major relaxation strategies. It was assumed that by training students in several strategies they would experience different relaxation effects and might find one particular method to be more desirable or suitable than others. Progressive relaxation was initiated as a means of recognizing and reducing muscle tension (Jacobson, 1964). Tobin's Ready Relaxation Response (1981) was next introduced as a simple meditative technique that could be evoked briefly many times throughout the day. Autogenic temperature training phrases (Luthe, 1969) along with the use of finger thermometers as biofeedback devices were then incorporated as a means of displaying and gaining control of visceral responses. Finally, imagery was practiced as a method of relaxation and self-enhancement (Lazarus, 1977). Students were requested to practice relaxation outside of class, keeping a log of their daily home practice.

Phase three of the course consisted of workshops designed to provide training in other stress management strategies. These workshops included training in time management, cognitive restructuring, communication skills, and assertiveness.

Instruments. In order to identify and assess levels of stress, stu-

dents were asked to complete several self-report instruments during the first and last weeks of the course. Four of these instruments served as pre and posttests: Tobin's (1981) Symptom Evaluation Survey (SES); State-Trait Anxiety Inventory (STAI), A-State and A-Trait (Spielberger, Gorsuch, & Lushene, 1970); and Beck's (1967, 1978) Depression Inventory (BDI).

1. The SES is a rating scale of psychophysiological symptoms, consisting of 54 items. Subjects respond to each item by rating the frequency with which they experience each symptom.

2. The STAI purports to measure two distinct anxiety concepts, state anxiety (A-State) and trait anxiety (A-Trait). Both scales consist of 20 items each. The A-State (X-1) indicates how people feel "at this moment" or "right now." The A-Trait (X-2) indicates how people generally feel.

3. The BDI is a self-rating inventory that measures depth of depression. The instrument consists of 21 symptom-attitude categories of depression and provides for grading the intensity of each.

Students also received the Mooney Problem Checklist, College Form (Mooney & Gordon, 1950). It consists of 330 items divided into 11 categories of problem areas. It was used as a tool to help identify the most prevalent problem areas within the student sample. The problem clusters were ranked and ordered by sex and age of respondents, then presented to the class for discussion as stressors in the lives of students. Several other paper-and-pencil instruments were also included in the course. Like the Mooney, these were intended to increase students' knowledge and self-awareness of stress. Similarly, the results of these instruments were

used in class discussion only and were not included in any pre/post statistical data. These included the Social Readjustment Rating Scale (Holmes & Rahe, 1967), an activity checklist, a nutritional record, and a substance-intake form.

Results

Pre and posttest means on each of the four instruments were compared using paired *t* tests. The differences reported in Table 1 demonstrate the significant overall stress reduction within the total sample. In order to examine these results more thoroughly, sample test performance was scrutinized for descriptive as well as experimental value. The distribution of sample scores on each instrument is reported in Table 2.

Insert Table 1 about here

The most significant difference reported in Table 1 was on the SES. Pretest scores ranged from 10-90, and posttest scores from 4-80. In spite of the significant difference, over half the sample reported mild to moderate stress on both pre and posttests (Table 2). Score ranges and classification of stress levels on the SES were suggested by Tobin (1980). The number reporting severe stress dropped from 17 to 9, while the number reporting low stress quadrupled on the posttest. The recently-developed SES has not been widely administred, therefore no normative data are available for comparison of sample scores.

Pre/posttest A-State sample means (Table 1) are considerably higher than those reported by Spielberger et al. (1970: p. 8) for undergraduate

students. Spielberger's means of 36.35 (males) and 35.12 (females) may be contrasted with our sample means of 45.66 (pretest) and 39.05 (posttest). Similarly, means on the A-Trait were also higher. Spielberger's means of 37.68 (undergraduate males) and 38.25 (undergraduate females) may be compared with our sample means of 44.83 (pretest) and 41.22 (posttest). A-State pretest scores ranged from 27-76 and posttest scores from 20-75. Table 2 describes the shift which produced the significant A-State differences reported in Table 1.

Insert Table 2 about here

STAI scores may range from a minimum of 20 to a maximum of 80 (Spielberger et al., 1970: p. 4). The four response categories for the 20-item A-State are "not at all," "somewhat," "moderately so," and "very much so." These carry scoring weights of 1, 2, 3, and 4, producing the 20-80 range. Identical weights are utilized in response categories for the A-Trait ("almost never," "sometimes," "often," and "almost always"). The distribution of individual scores on the A-State and A-Trait (Table 2) appears in categories based on STAI scaling weights. Although Table 2 reveals an impressive overall shift in A-Trait scores, differences are the least significant of all the tests described in Table 1 ($.05 < p < .10$).

Pre/posttest score distributions on the BDI (Beck, 1967; 1978) also appear in Table 2. The classifications and scale ranges are based on a system which appeared in Bumberry and Oliver (1978). Scores on the pretest ranged from 0-30; posttest scores ranged from 0-41. While pre/post differences are significant (Table 1), both means fall within the range

of "mild depression" to "not depressed." The distribution in Table 2 demonstrates that cases of moderate and severe depression are not uncommon among undergraduates.

Sample scores on the pre and posttests were also examined for sex differences. Table 3 describes male/female means and paired t values.

Insert Table 3 about here

Male posttest means are consistently lower than pretest means, but none of the differences are statistically significant (Table 3). Male SES scores ranged from 10-90 (pretest) and 5-75 (posttest). Male mean SES scores dropped an average of 3.74, shifting from a "moderate" to a "mild" stress level. Male A-State scores ranged from 27-76 (pretest) and from 22-72 (posttest). A-Trait scores ranged from 24-59 on the pretest and from 25-57 on the posttest. Male STAI sample means (Table 3) are higher than the undergraduate male means of 36.25 (A-State) and 37.68 (A-Trait) reported by Spielberger et al. (1970: p. 8). Conversely, mean BDI pre/posttest scores indicate a low level of depression among sample males. Male BDI scores ranged from 2-28 (pretest) and from 0-16 (posttest). Two male BDI pretest scores fell within the "severe depression" category; on the posttest both scores were in the lowest level of the "moderate" range.

Significant differences were found between female pre/posttest means (Table 3). Female SES scores ranged from 30-81 (pretest) and 4-80 (posttest). The female pretest mean falls within the "severe" category and drops to a "moderate" level on the posttest. The greatest average dif-

ference recorded in Table 3 was achieved by females on the SES. Female A-State scores ranged from 27-69 (pretest) and from 20-75 (posttest). A-Trait scores ranged from 28-69 (pretest) and 30-66 (posttest). Female STAI pretest means (Table 3) are much higher than Spielberger's female undergraduate means of 35.12 (A-State) and 38.25 (A-Trait); sample female posttest means are also somewhat higher. Female BDI means declined significantly; scores ranged from 5-39 on the pretest and from 2-30 on the posttest. The largest drop in individual female scores was 35 points, while the largest decline in individual male scores was 12 points. Even though female pre/posttest means are higher than male means, they fall within the level of "mild" to "low" depression. The three females whose scores fell within the "severe" range on the pretest scored within the "mild" or "not depressed" level on the posttest.

Insert Table 4 about here

Female means on each of the pretests were higher than male means. With the exception of A-State scores, they were also higher on posttests. Table 4 shows pooled *t* values and the significance of male/female differences. While males and females were often significantly different on pretests, female scores show a larger decline producing no significant male/female posttest differences.

The enrollment of a number of adult students permitted the data to be examined for age-level differences. The sample was divided into two groups, "young" (age 20 and under) and "old" (age 21 and over). Sexual balance in both groups was similar. Table 5 describes "young" and "old"

means on each of the four instruments.

"Young" sample SES differences are significant, even though pre and posttest means remain within the "moderate" stress range. SES scores ranged from 16-81 (pretest) and from 11-75 (posttest). STAI means (A-State and A-Trait) were considerably higher than Spielberger's means. "Young" A-State scores ranged from 27-67 (pretest) and from 20-75 (posttest). A-Trait scores ranged from 33-69 (pretest) and from 26-51 (posttest). Although STAI scores declined, differences were not significant. Similarly, "young" BDI scores declined, but not significantly. Scores ranged from 2-35 (pretest) and from 0-30 (posttest).

Insert Table 5 about here

"Old" sample pretest means were higher than "young" means on the SES, A-State, and BDI, and lower on the A-Trait. On the SES the "old" mean falls within the "severe" stress range. Scores ranged from 10-90 (pretest) and from 4-80 (posttest). Like the "young" sample, "old" SES means declined significantly on the posttest (Table 5). "Old" STAI pretest means on the A-State ranged from 29-76, and posttest means ranged from 22-48. A-Trait scores ranged from 24-66 (pretest) and from 26-51 (posttest). Reductions in posttest scores produced significant differences in "old" sample performance (A-State, $p < .01$; A-Trait, $.05 < p < .10$). "Old" sample scores on the BDI (pretest) produced a mean representing "mild" depression. The range of pretest scores on the BDI (0-39) included two cases of "severe" depression. Posttest scores ranged from 0-16, with no cases of severe depression. The decline in BDI scores produced a difference significant

at $.05 < p < .10$.

Table 6 shows pooled t values and the significance of differences in the performance of both age groups on pre and posttests. There were no significant differences between the groups on any of the pretests or on two of the posttests. On the A-State and A-Trait, however, the older group means were significantly lower than the posttest means for the younger group ($p < .05$).

Insert Table 6 about here

Traditional classroom variables were examined using Pearson r correlation coefficients. Attendance was taken daily, although it was not directly utilized in computing students' final grades. No significant correlation was found between age and attendance ($r = .15$). There was a strong inverse relationship between number of days missed and final course grade ($r = -.36$; $p < .05$). Attendance was not significantly related to pre/post differences on the SES, A-State, or BDI, but was found to be associated with A-Trait differences ($r = .37$; $p < .02$). The lower the number of days missed, the greater the reduction in A-Trait scores.

Based on the traditional 4.0 grading scale, mean female final grades (2.95) were higher than the male mean (2.11). No significant correlation was found between student age and final grade ($r = .21$). Students clearly understood that their final grades were based on two written examinations, homework assignments, and class participation, and that final grades were not contingent upon their performance on any of the instruments used in this study. Nevertheless, strong inverse correlations were found be-

tween final grade and degree of difference between pre and posttest scores on all instruments except the A-State (SES: $r = -.412$, $p < .01$; A-Trait: $r = -.310$, $p < .05$; BDI: $r = -.342$, $p < .05$). As mentioned earlier, attendance was related to final grade but was not significantly related to test differences on any instrument except A-Trait. Since student final grades symbolize mastery of course content, a pattern emerges linking high final grade, low number of days missed, and greater stress reduction. Conversely, grades decreased as number of absences increased, with little or no reduction in stress-test scores.

Discussion

If individuals can learn to modify their responses to stress, experimental programs must be carefully designed and tested to help define the scope, content, methods, and environments included in "stress management training."

Based upon research by Yorde and Witmer (1980) in which a lecture-discussion format proved to be effective in teaching individuals to cope with stress, an academic course was designed to provide college students with information concerning stress and to introduce specific skills believed to be useful in reducing stress (relaxation techniques, cognitive restructuring, assertiveness training, time management, etc.). From its inception, students understood that the course was an educational rather than a therapeutic situation, and that they were responsible for incorporating knowledge and skills into their everyday lives. The data reported here support Yorde and Witmer's findings that "a didactic group

approach is an effective method for teaching individuals appropriate stress-coping skills" (1980: p. 85).

The researchers in this study were particularly interested in reaching a typical college-age population within a conventional classroom setting. In admitting all students who registered for the course, the difficulty in controlling for extraneous variables which could affect internal validity was recognized. Competing explanations might be rendered for the reported student stress-reduction (changes in physical fitness, diet, home support systems, the college environment, maturation, etc.). Student subjective reports gathered during and after the course, along with post-course interview sessions, suggest that the results reported are indeed products of the course rather than the results of extraneous variables. For example, students reported heightened awareness of their maladaptive responses to stress (e.g., muscle tension, anger, frustration, headaches, anxiety, etc.). Many of these students also reported that they were now capable of controlling these negative consequences of stress. Several reported that their lives seemed to be less stressful as a result of the knowledge and practice acquired in the class. A typical response indicating this change was "Not as many things seem to cause me stress now."

It is difficult to pinpoint any exact cause that contributed most to the increased sense of control reported by students. Almost all students cited course content as beneficial in increasing knowledge and self-awareness of stress and stressors. With increased awareness came alterations in lifestyles in response to stressors. Students also reported that

relaxation training was particularly helpful in stress-reduction. Almost all students became proficient in eliciting the relaxation response in class training sessions with an instructor-facilitator. Several reported difficulty in achieving the same level of relaxation independently, outside of class. Daily records indicate a relationship between regular independent relaxation practice and ease in evoking the relaxation response. Those who practiced regularly and could readily evoke the relaxation response reported that relaxation training had been very beneficial in reducing their stress. This supports the benefits of relaxation training reported in the literature (Benson, 1975).

Students also reported positive results from cognitive restructuring (Ellis, 1975; Burns, 1981) in reducing psychological predispositions toward stress. Evaluations of time management and assertiveness training were also positive. Many students indicated that these strategies enhanced the quality of their lives by helping them deal more adequately with personal stressors. On the negative side, only a small number of studonts reported drawing any benefits from the daily stress journals. Most indicated that they were "a waste of time," and completed them in a haphazard manner (often at one or two settings). Nevertheless, the subjective data are encouraging and tend to support empirical findings.

While some normative data on stress test scores is available, there is a need for additional data and guidance in interpreting test scores. Sample scores in this study appear to be quite high. This might be related to the self-selective nature of the class. Many students indicated

that a need to learn to cope with stress was a major reason for choosing to enroll in the course. Several researchers have reported findings which may help to explain these high stress scores. Based upon his own experience, Segal (1966) estimated that approximately one-third of all college students need psychiatric assistance. Paul and Eriksen (1964) and Suinn (1968) note the anxieties and tensions accompanying the college experience which may interfere with the learning process and be a factor in student failure. According to Mack (1979), high levels of student stress may also be attributed to (a) the competetive student environment, (b) student experience (which brings a greater degree of insight into psychological problems), and (c) a higher sensitivity to failure. Mack notes that the typical institutional response to student stress has been the provision of counseling and guidance services in most American colleges and universities. Institutional programs and services should be periodically reviewed in order to evaluate their efficacy in dealing with student stress and also to determine if additional strategies are needed.

Similarly, additional research is needed to examine the relationship between stress and depression. Depression has been linked to other problems, such as alcohol, drug abuse, and suicide. Seligman (1973) contends that depression is the most common psychological dysfunction among college students. He also reports that depression is increasing in frequency. Other studies indicate that the rate of depression may be 50% higher in college populations than in the general American adult population (Bumberry & Oliver, 1978). The significance of the correlations between

scores on stress-related instruments and the BDI (Table 7) seem to suggest either that there is some conceptual overlap in the measurement of stress and depression or that the sample population in this study was high in both stress and depression. It is very interesting to note that scores on the BDI appear to be affected by stress-reduction content and strategies (Tables 1, 2, 3, and 5).

There is also a need to examine the effects of didactic stress-reduction programs on A-Trait measures. According to Spielberger et al., "Trait anxiety (A-Trait) refers to relatively stable individual differences in anxiety proneness" (1970: p. 3). Unlike the A-State, A-Trait scales do not seem to be sensitive to the conditions under which they are administered, which adds to their stability. In this research, however, as well as in the study by Yorde and Witmer (1980), significant changes in A-Trait scores were reported. Rather than demonstrating stability, individual A-Trait scores declined as much as 37 points on the posttest in our study. In a 3 month follow-up to their research, Yorde and Witmer found no remission toward pretest levels on the A-Trait (1980: p. 87). This evidence also confirms the claim that individuals can learn to modify their responses to stress and that group stress-management programs may be effective in non-clinical populations and surroundings. Increased knowledge about stress and stress-reduction techniques may enlarge the response repertoire of persons enrolled in such programs. The stress-management format utilized in this study could easily be adapted to reach a variety of groups outside the university (industry, hospitals, geriatric

centers, prisons, high schools, etc.).

Insert Table 7 about here

The variables of sex and age need to be carefully examined in stress research. In Spielberger et al. (1970), norms are reported for high school, freshman, and undergraduate males and females, as well as norms for clinical samples. Yorde and Witmer (1980) controlled for sex and age by balancing their experimental groups. No data were reported nor differences observed based on sex or age. Yet, our data indicate that sex as well as age may be critical variables in the study of stress and stress-reduction techniques.

Female means were higher than male means on every pretest and all but one posttest (A-State). On every test, females achieved a greater decline in test scores than males (Table 3); none of the male differences were significant while three of four female test differences were highly significant. In comparing male/female performance on the Mooney Problem Checklist, however, a significant difference was found in only one category ("Finances, Living Conditions, and Employment"). One factor which might affect test scores is a reluctance by males to report stress-related symptoms. Such reluctance would be consistent with the male role image commonly cited in the literature, and might mediate test responses.

The relationship between stress scores, depression scores, and sex is also intriguing. Females reported significantly higher levels of depression than males and achieved a significant reduction on posttest scores. Four of the six cases of severe depression were female. These results seem

to be consistent with the summary by Scarf (1979) reporting that females were 2-6 times more likely than men to experience depression. In spite of significant entry-level differences in our sample, there was no significant difference between male/female posttest depression scores. Additional research is clearly needed to explore male/female depression as well as the male/female stress response. Such differences may well mediate success in stress-management training.

When comparing the results of the "old" and "young" in our sample (Table 5, 6), no significant differences were found on any of the pretests. "Old" scores were slightly higher on every test but the A-Trait. The scores of older students dropped dramatically on the posttests, however, showing significant differences on virtually every measure. Score differences for the younger students were significant only on the SES. As a result of the greater drop in scores, older students differed significantly from younger students on both STAI measures. In examining sample performance on the Mooney Problem Checklist, no significant differences were found between "young" and "old" students in any category. This is surprising given the wide age range within the older group (21-56). The older group also demonstrated a greater decline in posttest depression scores. Exposure to a greater range of life experiences may have contributed to stress and depression-reduction within the older group. It appears as if the older students as a group benefited more than the younger students. Additional research is needed to investigate the possibility that the age factor may mediate performance in stress-reduction training.

This study raises a number of critical questions regarding stress-reduction training while providing general support for the definition of stress as a physical response to cognition and perception (Wolff, 1953, 1968; Selye, 1956, 1976; Speisman, Lazarus, & Mordkoff, 1964; Levitt, 1967; Meichenbaum, 1974). This study provides evidence that stress reduction can be achieved by a typical college-age population in a conventional classroom setting in an academic course combining a lecture/discussion format with practice sessions on specific stress-management techniques. It confirms the findings by Yorde and Witmer (1980) that a didactic group approach is an effective method for teaching stress-management skills.

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Table 1

Pre/Posttest Sample Means and Paired *t* Values

	Means			
Test	Pre	Post	Differences	*t*
SES	47.73	38.51	- 9.22	- 3.409*
A-State (STAI)	45.66	39.05	- 6.61	- 2.489**
A-Trait (STAI)	44.83	41.22	- 3.61	- 1.921***
BDI	11.68	7.88	- 3.80	- 2.597**

Note. $n = 41$.

*$p < .01$.

**$p < .02$.

***$.05 < p < .10$.

Table 2

Frequency Distribution: Pre/Posttest Scores

Scores		Pretest	%	Posttest	%
		SES			
0-20	Low stress	2	5%	8	20%
21-35	Mild stress	11	27%	9	22%
36-50	Moderate stress	11	27%	15	37%
51+	Severe stress	17	41%	9	22%
		A-State (STAI)			
20-39		13	32%	24	59%
40-59		21	51%	14	34%
60-80		7	17%	3	7%
		A-Trait (STAI)			
20-39		13	32%	22	54%
40-59		25	61%	18	44%
60-80		3	7%	1	2%
		BDI			
0-9	Not depressed	19	46%	28	68%
10-15	Mild depression	14	34%	4	10%
16-23	Moderate depression	3	7%	8	20%
24-63	Severe depression	5	12%	1	2%

Note. $n = 41$.

Table 3

Male/Female Pre/Posttest Means and Paired t Values

Test	Means		Differences	t
	Pre	Post		
		Males (n = 19)		
SES	38.06	34.32	- 3.74	- 1.067
A-State (STAI)	45.16	41.26	- 3.90	- .982
A-Trait (STAI)	41.47	40.21	- 1.26	- .617
BDI	8.16	6.11	- 2.05	- 1.623
		Females (n = 22)		
SES	56.09	42.14	- 13.96	- 3.655*
A-State (STAI)	46.09	37.14	- 8.96	- 2.501**
A-Trait (STAI)	47.73	42.09	- 5.64	- 1.877***
BDI	14.73	9.41	- 5.32	- 2.136**

*$p < .01$.

**$p < .05$.

***$.05 < p < .10$.

Table 4

Pooled t Values: Male/Female Pre/Posttest Differences

Test	Pretest	Posttest
SES	- 3.394*	- 1.378
A-Trait (STAI)	- .242	.961
A-State (STAI)	- 1.920***	- .584
BDI	- 2.425**	- 1.550

*$p < .01$.

**$p < .05$.

***$.05 < p < .10$.

Table 5

Young/Old Pre/Posttest Means and Paired t Values

Test	Means		Differences	t
	Pre	Post		
		Young (n = 28)		
SES	46.07	38.71	- 7.36	- 2.518**
A-State (STAI)	45.04	42.21	- 2.82	- .917
A-Trait (STAI)	46.04	43.46	- 2.57	- 1.114
BDI	11.18	8.50	- 2.68	- 1.623
		Old (n = 13)		
SES	51.31	38.08	- 13.23	- 2.285**
A-State (STAI)	47.00	32.23	- 14.77	- 3.294*
A-Trait (STAI)	42.23	36.39	- 5.85	- 1.787***
BDI	12.77	6.54	- 6.23	- 2.118***

*$p < .01$.

**$p < .05$.

***$.05 < p < .10$.

Table 6

Pooled *t* Values: Young/Old Pre/Posttest Differences

Test	Pretest	Posttest
SES	- .815	- .102
A-State (STAI)	- .477	2.283*
A-Trait (STAI)	1.057	2.162*
BDI	- .513	.841

*$p < .05$.

Table 7

Pearson r Correlations Between Test Scores

	SES	A-State (STAI)	A-Trait (STAI)
Pretests			
A-State (STAI)	.361**		
A-Trait (STAI)	.539*	.668*	
BDI	.634*	.611*	.805*
Posttests			
A-State (STAI)	.251***		
A-Trait (STAI)	.511*	.641*	
BDI	.700*	.471*	.766*
Pre/Posttest Differences			
A-State (STAI)	.323**		
A-Trait (STAI)	.387**	.644*	
BDI	.644*	.517*	.747*

*$p < .01$.

**$p < .05$.

***$.10 < p < .20$.